

## Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



United States Department of Agriculture  
Agricultural Research Service



A LIST OF REFERENCES ON THE REARING OF COCKROACHES  
FOR EXPERIMENTAL PURPOSES

By

P. G. Piquett and J. H. Fales, Entomology Research Branch

The use of cockroaches as test insects in the evaluation of chemicals as insecticides and for insect pathology has increased in recent years. Rearing techniques have therefore become important, and much information on this subject has appeared in the literature. The accompanying list represents a review of the literature from 1886 through September 1955 and includes references to books and papers that contain information on rearing methods, equipment, and food, as well as papers restricted to rearing techniques.

Barron, E. S. G., and Tahmisian, T. N.

1948. The metabolism of cockroach muscle (Periplaneta americana).  
Jour. Cellular and Comp. Physiol. 32: 57-76.

Beier, Max

1933. Biologie der Tiere Deutschland. Gebruder Borstraeger,  
Berlin.

Bode, Hans

1936. Die Bacteriensymbiose bei Blattiden und das Verhalten von  
Blattiden bei aseptischer Aufzucht. Arch. f. Mikrobiol.  
7: 391.

Bottimer, L. J.

1945. Roach rearing and testing. Soap and Sanit. Chem. 21(12): 151.

Bowers, R. E.

1940. Insect life without vitamin A. Blattella germanica L. Science  
92(470): 291.

Brindley, H. H.

1897. On the regeneration of the legs in the Blattidae. Zool. Soc.  
Proc., p. 903.

Brown, A. W. A., Wenner, B. J., and Park, F. E.

1948. Toxicity of selected organic compounds to insects. Part II.  
Canad. Jour. Res., Sect. D., Zool. Sci. 26(3): 188-196.

Brown, E. B.

1952. Observations of the life history of the cockroach Ectobius panzeri Stephens. Ent. Monthly Mag. 88: 209-212.

Cameron, Ewen

1953. Some new and improved methods for demonstrating the cockroach (Periplaneta americana). Roy. Ent. Soc., London, Proc. Ser. A, Gen. Ent. 28(4-6): 41-44.

Campbell, F. L.

1941. Tests on crawling insects. Soap and Sanit. Chem. 17(7): 105-107.

Chopard, Lucien

1950. Sur l'anatomie et le developpement d'une blatte vivipare.  
8th Intern. Cong. Ent., Proc., pp. 218-222.

Cloudsley-Thompson, J. L.

1953. Studies in diurnal rhythms. III. Photoperiodism in the cockroach, Periplaneta americana (L.). Ann. and Mag. Nat. Hist. 6(69): 705-712.

Cottam, R.

1922. Observations on the phyllodromine cockroach, Blattella (Supella) supellectilium Serv., in Khartoum. Ent. Monthly Mag. 58: 156-157.

Cox, Alvin J.

1944. Insecticide testing. Rearing cockroaches. Soap and Sanit. Chem. 20(6): 114; 20(7): 123.

Crowell, H. H.

1946. Notes on an amphibious cockroach from the Republic of Panama. Ent. News 57: 17.

Dahms, P. A.

1955. A convenient method for rearing large cockroaches. Jour. Econ. Ent. 48: 480-482.

Davis, W. T.

1930. Rearing the young of the viviparous cockroach, Panchlora cubensis. N. Y. Ent. Soc. Jour. 38: 85-88.

Day, M. F.

1952. Wound healing in the gut of the cockroach Periplaneta.  
Austral. Jour. Sci. Res., Ser. B, Biol. Sci. 5: 282-289.

Edmunds, L. R.

1952. Parcoblatta pensylvanica, P. virginica. Ent. News 63: 141-144.

- 
1953. Collecting and culturing of native wood roaches in Ohio, with  
some additional notes on their parasites. Ent. News 64:  
225-230.

Eisa, E. A.

1951. The behavior of cockroach (Periplaneta americana) toward  
the different food materials. Euclides 11(121): 130-131.

and Soliman, A. A.

- 
1953. Chemoattraction of food constituents to insects. I. Chemo-  
attraction of foods to cockroaches Periplaneta americana.  
Soc. Fouad l'er d'Ent. B. 37: 167-172.

Fischer, Olga

1927. Die Entwicklung von Periplaneta americana. Naturf. Gesell.  
in Bern, Mitt. pp. 5-7.

Foster, A. L.

1930. Sinclair raises flies at refinery to study insecticides.  
Natl. Petrol. News 22: 67.

Gates, M. F., and Allee, W. C.

1933. Conditioned behavior of isolated and grouped cockroaches  
in a simple maze. Jour. Compar. Psychol. 15: 331.

Gier, H. T.

1936. The morphology and behavior of the intra cellular bacteroids  
of roaches. Biol. Bul. 71: 433.

- 
1936. The intracellular symbionts of some Blattidae, their nature  
and behavior. Anat. Rec. 64(1): 126-127.

- 
1947. Growth rate in American roaches. Ent. Soc. Amer. Ann.  
40: 303-317.

Goodhue, L. D., and Tissol, C. L.

1952. Determining the repellent action of chemicals to the American cockroach. Jour. Econ. Ent. 45: 133-134.

Gould, G. E.

1940. The brown-banded roach--Life history and habits. North Central States Ent., Proc. 19th Conf., pp. 45-46.

- 
1940. The effect of temperature upon the development of cockroach. Ind. Acad. Sci. Proc. 50: 242-248.

and Deay, H. O.

- 
1938. Notes on the bionomics of roaches inhabiting houses. Ind. Acad. Sci. Proc. 47: 281-284.

and Deay, H. O.

- 
1938. Biology of the American cockroach, Periplaneta americana (Linn.). Ent. Soc. Amer. Ann. 31(4): 489-498.

and Deay, H. O.

- 
1940. Biology of six species of cockroaches which inhabit buildings. Ind. Agr. Expt. Sta. Bul. 451.

Graber, Veit

1887. Thermische Experimente auf der Kuchenschabe (Periplaneta orientalis). Pfluger, Arch. f. die Gesam. Physiol. 41: 240-256.

Grady, A. G.

1928. Studies in breeding insects throughout the year for insecticide tests. Jour. Econ. Ent. 21: 598-661.

Griffiths, J. T., and Tauber, O. E.

1942. Fecundity, longevity, and parthenogenesis of the American roach, Periplaneta americana L. Physiol. Zool. 15: 196-209.

and Tauber, O. E.

- 
1942. The nymphal development for the roach, Periplaneta americana L. N. Y. Ent. Soc. Jour. 50(3): 263-272.

Gunn, D. L.

- 1933-4. The temperature and humidity relations of the cockroach (Blatta orientalis). Ztschr. f. Vergleich. Physiol. 20: 617.

Haber, V. R.

1920. Oviposition by a cockroach. Ent. News 31: 190-192.



Haber, V. R.

1926. I. The blood of insects with special reference to that of the common household German or Croton cockroach, Blattella germanica Linn. Brooklyn Ent. Soc. 21(3): 61-92.

Heal, R. E.

1948. Rearing methods for German and American cockroaches. Jour. Econ. Ent. 41: 329.

Heikertinger, F.

1925. Allgemeines über Züchtung von Insekten. Handbuch der biologischen Arbeitsmethoden, pp. 25-80. Berlin and Vienna.

Hermes, W. B., and Yorgon, Nelson

1913. The croton bug (Ectobia germanica) as a factor in bacteria dissemination. Amer. Jour. Pub. Health 3: 929-934.

Hobmaier, M.

1941. Extramammalian phase of Physaloptera maxillaris Molin, 1860 (Nematoda). Jour. Parasitol. 27: 233.

Holmgren, Nils

- 1903-4. Ueber Viviparae Insecten. Zool. Jahrbucher, Abt. für System., Geog. und Biol. der Tiere 19: 433-468.

House, H. L., and Patton, R. L.

1949. Nutritional studies with B. germanica (L.) reared under aseptic conditions. I. Equipment and technique. Canad. Ent. 81: 94-100.

Hsiang, C. M., Pollard, M., and Micks, D. W.

1952. The possible role of the cockroach in the dissemination of poliomyelitis virus. Tex. Rpt. Biol. and Med. 10: 329-335.

Illingworth, J. F.

1915. Notes on Hawaiian roaches. Hawaii. Ent. Soc. Proc. 3: 136-140.

- 
1942. An outbreak of cockroaches Nauphoeta cinerea (Oliver) in Honolulu. Hawaii. Ent. Soc. Proc. 11: 169-170.

Klastermeyer, Edward C.

1943. Roach powders. Soap and Sanit. Chem. 19(2): 98-99, 109.

Klein, H. Z.

1933. Zur biologie der amerikanischen Schabe. Ztschr. f. Wiss. Zool. 144: 102.

Kudrjaschow, B. A., and Petrows Kaja, O. A.

1947. Vitamin E und Lebensfähigkeit der Keimzellen von Insekten. (Versuche an Periplaneta orientalis). Bul. Biol. Med. Exptl. U.S.S.R. 4: 490-492.

Laing, F.

1946. The cockroach (its life history and how to deal with it). Brit. Mus. Nat. Hist. Econ. Ser. 12.

Macfie, J. W. S.

1922. Observation on the role of cockroaches in disease. Ann. Trop. Med. and Parasitol. 23: 441-448.

Marlatt, C. L.

1902. Cockroaches. General, habits, history, control. U. S. Bur. Ent. Cir. 51.

McCay, C. M.

1933. An insect test for vitamin B fractions. Jour. Biol. Chem. 100: 67.

- 
1938. The nutritional requirements of Blattella germanica. Physiol. Zool. 11: 89-103.

---

and Melampy, R. M.

1937. Culture methods for invertebrate animals. 283 pp. Comstock Publishing Assoc., Ithaca, N. Y.

McGovran, E. R., and Fales, J. H.

1942. Roach testing. Soap and Sanit. Chem. 18(3): 101, 103, 105, 107, 117.

Meglitsch, P. A.

1940. Cytological observations on Endamoeba Blattae. III. Biol. Monog. 17:11.

Melampy, R. M., and Maynard, L. A.

1937. Nutritional studies with the cockroach Blattella germanica. Physiol. Zool. 10(1): 36-44.



Miall, L. C., and Denny, Alfred

1886. The cockroach. Lovell Reeve, London.

Minami, H., and Dallenbach, K. M.

1946. The effect of activity upon learning in the cockroach  
(Periplaneta americana). Amer. Jour. Psychol. 59(1): 1-58.

Morrell, C. C.

1911. The bacteriology of the cockroach. Brit. Med. Jour. 2(2658):  
1531-1532.

Munger, F., and Siegler, E. H.

1937. Insecticide tests on roaches. Soap 8(10): 94-97.

Nigam, L. N.

1933. The life history of a common cockroach (Periplaneta americana  
Linneus). Indian Jour. Agr. Sci. 3: 530-543.

Noland, J. L.

1954. Sterol metabolism in insects. I. Utilization of cholesterol  
derivatives by the cockroach Blattella germanica L. Arch.  
Biochem. and Biophys. 48: 370-379.

\_\_\_\_\_ and Baumann, C. A.

1951. Protein requirements of the cockroach Blattella germanica.  
Ent. Soc. Amer. Ann. 44: 184-188.

\_\_\_\_\_ Lilly, J. H., and Baumann, C. A.

1949. A laboratory method for rearing cockroaches, and its applica-  
tion to dietary studies on the German roach. Ent. Soc.  
Amer. Ann. 42: 63-70.

Nutting, W. L.

1953. Giant cockroaches of the genus Blaberus as laboratory  
animals. Turtox News 31: 134-136.

\_\_\_\_\_ 1953. Observations on the reproduction of the giant cockroach  
Blaberus craniifer. Psyche 60: 6-14.

Olson, T. A., and Ruger, M. E.

1950. Experimental passage of Salmonella through roaches. U. S.  
Pub. Health Rpt. 65(16): 531-540.

Pettit, L. C.

1940. Blattella germanica Linn., its embryogeny, life history, and importance. Cornell Univ. Abstracts of Theses, pp. 275-278.

Piquett, P. G., and Fales, J. H.

1952. Rearing cockroaches for experimental purposes. U. S. Bur. Ent. and Plant Quar. ET-301, 12 pp.

\_\_\_\_\_ and Fales, J. H.

1953. Life history of Blaberus giganteus (L.). Jour. Econ. Ent. 46: 1089-1090.

Rau, P.

1943. How the cockroach deposits its egg case. Ent. Soc. Amer. Ann. 36: 221.

1944. A note on the period of incubation of eggs of the cockroach (Blattella germanica). Canad. Ent. 76: 212.

1946. Food preferences of the cockroach Blatta orientalis (L.). Ent. News 56: 276-278.

Ross, Herbert H.

1928. The life history of the German cockroach. III. State Acad. Sci. Trans. 21: 84-92.

Sanford, E. W.

1918. Experiments on the physiology of digestion in the blattidae. Jour. Exptl. Zool. 25: 355-402.

Scharrer, Berta

1946. The role of the Corpora allata in the development of Leucophaea maderae (Orthop.). Endocrinology 38(1): 35-45.

1951. The wood roach. Sci. Amer. 185(6): 59-62.

Schwabe, C. W.

1947. Pycnoscelus surinamensis. Hawaii. Ent. Soc. Proc. 13: 433-436.

1951. Studies on Oryspirura mansonii the tropical eyeworm of poultry. Pacific Sci. 5(1): 18.

Seamans, Lois and Woodruff, L. C.

1939. Some factors influencing the number of molts of the German roach. Kans. Ent. Soc. Jour. 12(3): 73-76.

Sieburth, J. F., Bonsall, Mary Gail, and McLaren, Barbara A.

1951. Simplified biological assay method using the cockroach Periplaneta americana (Linn.) for protein utilization. Ent. Soc. Amer. Ann. 44: 463-468.

Spencer, G. J.

- 1940-6. On the oviposition habits of the Australian cockroach Periplaneta australasiae (Fab.). Brit. Columbia Ent. Soc. Proc. 37-43: 29.

Takahaski, R.

1924. Life history of Blattidae. Dobutsugaku Zasshi 36: 215-230.

Trager, W.

1941. Nutrition of invertebrates. Physiol. Rev. 21: 14-15.

Tuma, Vladimir

1938. Roaches--Resistance to insecticides. Soap 14(6): 109.

Turner, C. H.

1912. Responses to light of the roach. Biol. Bul. 23: 371.

- 
1913. Behavior of the common roach (P. orientalis). Biol. Bul. 25: 348-365.

Washburn, F. L.

1913. Trap for cockroaches. Jour. Econ. Ent. 6: 327-329.

Watson, John R.

1929. Rearing of Pycnaelus. Fla. Agr. Expt. Sta. Ann. Rpt., p. 58.

Wellborn, V.

1935. Schabenbekämpfung mit 808 Präparaten. Anz. f. Schädlingssk. 11: 67.

White, M. J. D.

1951. Cytogenetics of orthopteroid insects. Adv. Genet. 4: 268-330.

Wille, J.

1920. Monographien zur angewandten Biologie und Bekämpfung der deutschen Schabe (Phyllodromia germanica L.). Nr. 5  
Zeitschr. Angew. Ent. 7: 140.

Wollman, E.

1926. Observations sur une bignee aseptique de Blattes (Blattella germanica) datant de cinq ares. Soc. de Biol. [Paris]  
Comp. Rend. 95(22): 164-165.

Woodbury, E. N.

1938. Test methods on roaches. Soap 14(8): 86-90, 107, 109.

- 
1943. Rearing insects affecting man and animals. In Chemical Control of Insects, edited by Campbell and Moulton, AAAS  
Pub. No. 20, pp. 60-73.

---

and Barnhart, C. S.

1939. Tests on crawling insects. Soap and Sanit Chem. 15(9): 93-101.

Woodruff, L. C.

1937. Autospasy and regeneration in the roach, Blattella germanica L.  
Kans. Ent. Soc. Jour. 10: 1-9.

- 
1938. Observation on roach production. Kans. Ent. Soc. Jour. 11:  
94-96.

- 
1938. The normal growth rate of Blattella germanica L. Jour.  
Exptl. Zool. 79(1): 145-165.

Zabinski, J.

1929. Growth of blackbeetles and cockroaches on artificial and on incomplete diets. Brit. Jour. Exptl. Biol. 6: 360-385.

- 
1928. [Rearing cockroaches on an artificial diet.] Soc. de Biol.  
[Paris] Compt. Rend. 98: 73, 78. [In French.]

Zacher, F.

1928. Handbuch der biologischen Arbeites-Methoden, Abt. 9, Teil  
1, Hefte 2, Bd. 1.

Zappee, M. P.

1919. Life history of the greenhouse cockroach Pycnocelus surinamensis,  
Linn. Conn. Agr. Expt. Sta. Bul. 211, pp. 311-313.



